



COMPRESSED **GAS** ASSOCIATION, INC.

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RSFA-1995-12672

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JUL 24 1995

CGA DOCKET # 92-64

Research and Special Programs Administration  
U.S. Department of Transportation  
400 Seventh Street SW  
Washington, DC 20590-0001

Re: Petition for Rulemaking; 49 CFR 172.400

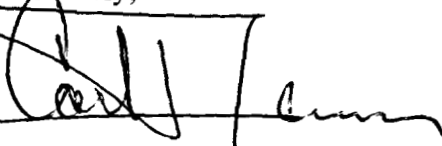
Gentlemen:

The Compressed Gas Association (CGA) hereby respectfully petitions for a rulemaking to change certain provisions of the Hazardous Materials Regulations (HMR) pertaining to the labeling and marking of compressed gas cylinders.

The Compressed Gas Association (CGA), founded in 1913, represents over two hundred member companies worldwide in the development and promotion of safety standards and safe practices in the industrial and specialty gas industry. The Association represents all facets of the industry - manufacturers, distributors, equipment suppliers, and transporters. Through the committee system CGA creates technical specifications, safety standards, training and educational materials; and also works with government agencies to formulate responsible regulations and standards and to promote compliance with these regulations and standards.

The substance and justification of our petition are enclosed (see enclosure 1) along with a copy of Appendix A from our publication, CGA C-7--1992 "Guide to the Preparation of Precautionary Labeling and Marking of Compressed Gas Containers" (see enclosure 2) which pertains.

Sincerely,



Carl T. Johnson  
President

Enclosures

DOT/RSFA/OHMS  
DOCKETS UNIT

95 JUL 26 PM 4:56

**Petition to Allow CGA C-7, Appendix A Markings**  
**On Cylinders Transported by Common Carriers**

The Compressed Gas Association (CGA) hereby petitions for a rulemaking change to 49 CFR 172.400a, **Exceptions from labeling**. At present this part does not require a label (as described by 49 CFR 172.407 (c) (1) ) on certain items carried by private or contract motor carriers if certain conditions are met. Instead, part 172.400a allows the use of markings meeting the requirements of CGA Pamphlet C-7, Appendix A. The purpose of this petition is to request a change to part 172.400a that will also extend this same label non requirement to those same certain items when carried by common motor carriers.

Specifically, CGA proposes to add “common motor carrier” to sub-subparagraph 172.400a(a)(1)(ii) of 49 CFR in order to allow the transportation of the defined items under the defined conditons by common motor carriers if those items are marked in accordance with CGA Pamphlet C-7, Appendix A. If this petition is granted, subparagraph 172.400a(a)(1) would be changed to read as follows:

- “1. A cylinder or dewar flask conforming to §173.320 of this subchapter containing a Division 2.1 or Division 2.2 gas that is:
  - (i) Not poisonous;
  - (ii) Carried by a private, contract, or common motor carrier;
  - (iii) Not overpacked; and
  - (iv) Durably and legibly marked in accordance with CGA Pamphlet C-7, Appendix A.”

In support of this petition for rulemaking, CGA offers the following information:

1. The CGA C-7 marking enhances the industry’s ability to meet OSHA’s requirement that precautionary labels not be removed from containers until containers have been emptied. Cylinder “neck labels” are less subject to abrasions than cylinder body labels and are less likely to loosen and fall off because the smaller (30 mm or 1.25 inch) neck label configuration conforms to cylinder shoulder curvature more closely than the larger 100 mm or 3.9 inch sized labels.
2. The smaller (30 mm or 1.25 inch) diamond markings which are affixed to the shoulder of cylinders are more visible when cylinders are grouped together than when the information is on a label affixed to the vertical cylinder wall. In addition, C-7 markings contain the proper shipping name

and the identification number of the product adjacent to the smaller diamond marking making it easier to identify products.

3. The Canadian Transportation of Dangerous Goods regulation allows the smaller size label to be used on cylinders with a diameter up to 200 mm (8 inches). The Canadian members have been using these smaller labels since 1985 and have reported that the smaller labels are much better preserved and less likely to be damaged in transit or use than the large labels. There has been no diminution of public safety in Canada with the use of the smaller labels. "Reciprocity" with Canada will be enhanced with this proposed change.
4. Markings meeting the requirements of CGA Pamphlet C-7, appendix A are currently authorized for cylinders carried by private and contract carriers under 172.400a(a)(1)(ii).
5. The use of smaller markings and diamonds will not detract from a common carriers ability to segregate and stow cylinders since cylinders shipped individually must be moved individually by employees who are close enough to read the smaller diamond markings.
6. European regulations authorize the use of labels less than 100 mm in size.
7. If DOT approves this petition for rulemaking, safety in transporting these hazardous materials will not be reduced. Shipping papers provide hazard communication information which can be used in the event of an emergency. Labels attached to cylinders are unlikely to be used in an emergency because this would require close proximity to a container which may be leaking.

For the above reasons, CGA requests that DOT consider this petition for rulemaking. This rulemaking would not be considered significant under DOT guidelines because the financial impact is less than \$100 million. This change will allow CGA member companies to save 15 to 20 million dollars annually.

If you have any questions about this petition, please contact us at (703) 412-0900, Ext. 719.

## APPENDIX A

### CGA MARKING SYSTEM FOR COMPRESSED GAS CYLINDERS

The CGA MARKING SYSTEM consists of the BASIC MARKING and additional precautionary, and government-required information.

A-1. The CGA developed the BASIC MARKING to provide immediate identification of cylinder contents by using the DOT/TC proper shipping name, product identification number, and hazard class diamond within a single marking. Certain cylinders which bear the BASIC MARKING may be transported, without further DOT labeling, under specific conditions set forth by the U.S. Department of Transportation in the U.S. *Code of Federal Regulations* at 49 CFR 172.400a or the *Transportation of Dangerous Goods Regulations* in Canada. [2] and [3] In the United States, 49 CFR Part 172.400a(a)(1) authorizes this BASIC MARKING for cylinders containing flammable and non-flammable compressed gases that are carried by private or contract motor carrier and which are not overpacked.

A-2. The BASIC MARKING, illustrated in Figure 1, shall consist of a diamond-shaped figure, indicating the hazard class of the contained gas, combined with a panel containing the DOT/TC proper shipping name of the contained gas and the DOT/TC product identification number. The panel shall be located to the left of the diamond.

Both 49 CFR 172.101 and the *Transportation of Dangerous Goods Regulations* of Transport Canada specify that certain gases, with significant additional hazards, will require multiple square-on-point (diamond) labels. For such gases, the BASIC MARKING shall include additional diamonds denoting the secondary hazard or hazards. Hazard Class numbers shall only appear on the primary hazard diamond. The hazard class number shall not appear on the secondary hazard diamond or diamonds. The diamonds shall be adjacent to one another but their adjoining points may overlap by not more than 3/8-inch (10 mm), as illustrated in Figure 2. The primary hazard diamond shall be placed to the left of the secondary hazard diamond(s).

A-2.1 The letters "USP" or "NF", as required by the Federal Food and Drug Administration, or Health and Welfare Canada, may also be shown in this panel. USP refers to United States Pharmacopeia and NF refers to National Formulary, both of which are published by the United States Pharmacopeial Convention, Inc. [7]

A-2.2 When required, the following additional information may also be included in this panel: the letters "RQ" (49 CFR 172.324(b) for a hazardous substance defined by 49 CFR 171.8) and/or the words "Inhalation Hazard" (Column 7, Special Provisions of Table 172.101).

A-3. The CGA MARKING SYSTEM, illustrated in Figure 3, provides for additional information on cylinders, such as the name of the supplier, precautions to be observed in the handling, storage, and use of the cylinder and/or its contents, and other information of value to the user. The CGA MARKING SYSTEM may include information for Medical Use or Industrial Use as may be required by other regulatory bodies. The CGA MARKING SYSTEM allows the additional information to appear above, beside or below the BASIC MARKING so long as it does not interfere with the recognition of the BASIC MARKING.

A-4. The diamond figure in the BASIC MARKING shall measure 1-1/4 inch (30 mm) on each side and the corners shall have an included angle of 90°. The pictorial symbol, hazard class number and color of the diamond shall be the same as the comparable DOT label described in 49 CFR 172.407 through 172.450 or in the Transport Canada regulations. The hazard class number should be not less than 3/16" (5 mm) in height. The pictorial symbol must be proportional in size to that shown in the referenced section. The hazard class words (for example: flammable gas) may be included in the diamond in letters not less than 1/8" in height.

The oxidizer diamond may be used for shipment of oxygen in the United States and Canada in place of the Non-Flammable Gas and Oxidizer labels. In the United States, this diamond must be modified by replacing the word OXIDIZER and the hazard class number 5.1 with the word OXYGEN and the hazard class number 2 in accordance with 49 CFR 172.405(b).

A-5. The panel to the left of the diamond shall be white and shall be imprinted with the DOT/TC proper shipping name of the contained gas in black letters not less than 3/16-inch (5 mm) in height. The DOT/TC product identification number, required by 49 CFR 172.301 and by the Transportation of Dangerous Goods Regulations shall be printed in letters not less than 1/16" (2 mm) in height. The panel shall measure not less than 1-inch (25 mm) from top to bottom but may vary in length to accommodate the DOT/TC proper shipping name.

ENCLOSURE 2

A-5.1 Where required, the letters "RQ" and/or the words "INHALATION HAZARD" shall be printed in letters not less than 1/16" (2 mm) in height.

A-6. For gas mixtures classified as N.O.S., the technical names of at least two components which most predominantly contribute to the hazards of the mixture must appear in parenthesis in association with the proper shipping name. The percentages of the components may be included.

A-7. The BASIC MARKING shall be located (a) when space permits, on the shoulder of the cylinder, but not covering any permanent markings, or (b) on the side of the cylinder at a point approximately two thirds of the distance from the cylinder bottom to the top of the valve or cap.

A-7.1 The complete CGA MARKING SYSTEM may be of any size or shape suitable for application to the cylinder on which it is to be used, subject only to the restriction that the BASIC MARKING shall occupy a position of prominence.

A-7.2 The complete CGA MARKING SYSTEM may have, as a background color, any color which suits the user, with the exception that there must be a contrast between the background color and the color which is required for the diamond in the BASIC MARKING. When an identical or similar background color is desirable, this contrast may be

accomplished by providing a border of contrasting color to separate the BASIC MARKING from the background. A similar border is required where the BASIC MARKING is to be applied to a non-contrasting surface.

A-7.3 The BASIC MARKING and/or the CGA MARKING SYSTEM shall be firmly affixed to the surface of the container and shall be of materials which are durable under conditions incident to transportation, storage, and use and shall be maintained in legible condition.

A-7.4 The BASIC MARKING and/or the CGA MARKING SYSTEM shall remain affixed to the cylinder, full or empty, so long as it remains in the same gas service. The BASIC MARKING provides identification of the hazardous material contained in a filled cylinder. The information is of equal value to the handlers of so-called "empty" cylinders, as it provides identification of any residual hazardous material which may be present in the cylinder. The removal or replacement of the BASIC MARKING shall, therefore, be performed only by the supplier responsible for the filling of the cylinder.

A-8. The guidelines and precautionary statements, to be found elsewhere in this publication, have been prepared to assist the supplier in developing labeling. Although suppliers may adopt these statements, they are not to be considered either mandatory or all-inclusive.

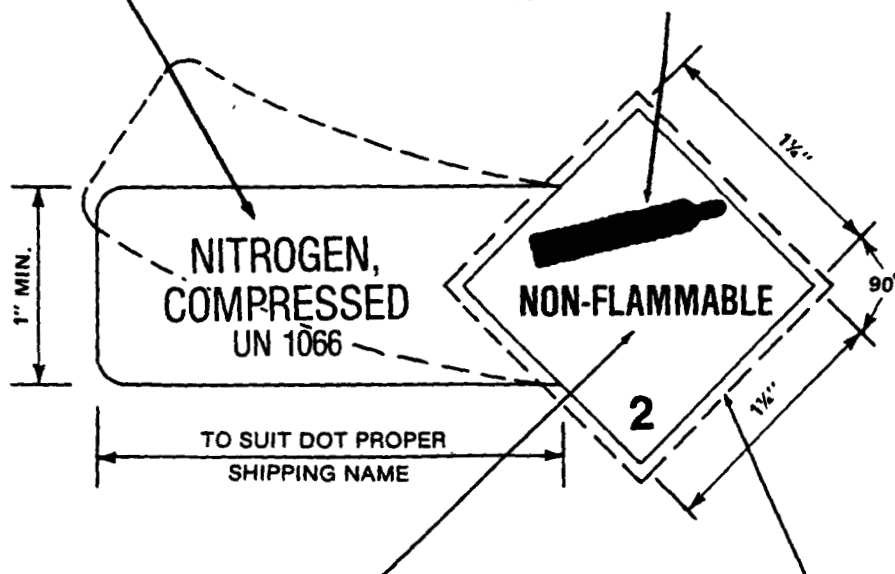
## THE BASIC MARKINGS

FIGURE 1

These illustrations use the style of labels required by U.S. DOT regulations. Except in the case of a few specifically named poison gases, TC regulations in Canada require a pictorial label without words.

White Panel containing the proper shipping name and DOT/TC identification number of the gas in black letters not less than 3/16" (5 mm) in height for the shipping name and 1/16" (2 mm) in height for the number. The Panel may be either curved or rectangular.

Color of the diamond, hazard class number, and pictorial symbol are to be in accordance with comparable DOT labels described in 49 CFR 172.407 through 172.450 or the TC regulations. The hazard class number should be not less than 3/16" (5 mm) in height. The pictorial symbol must be proportional in size to that shown in the referenced section.



SCALE: FULL SIZE

In the United States, hazard class words, in letters not less than 1/8" (3 mm), may be used.

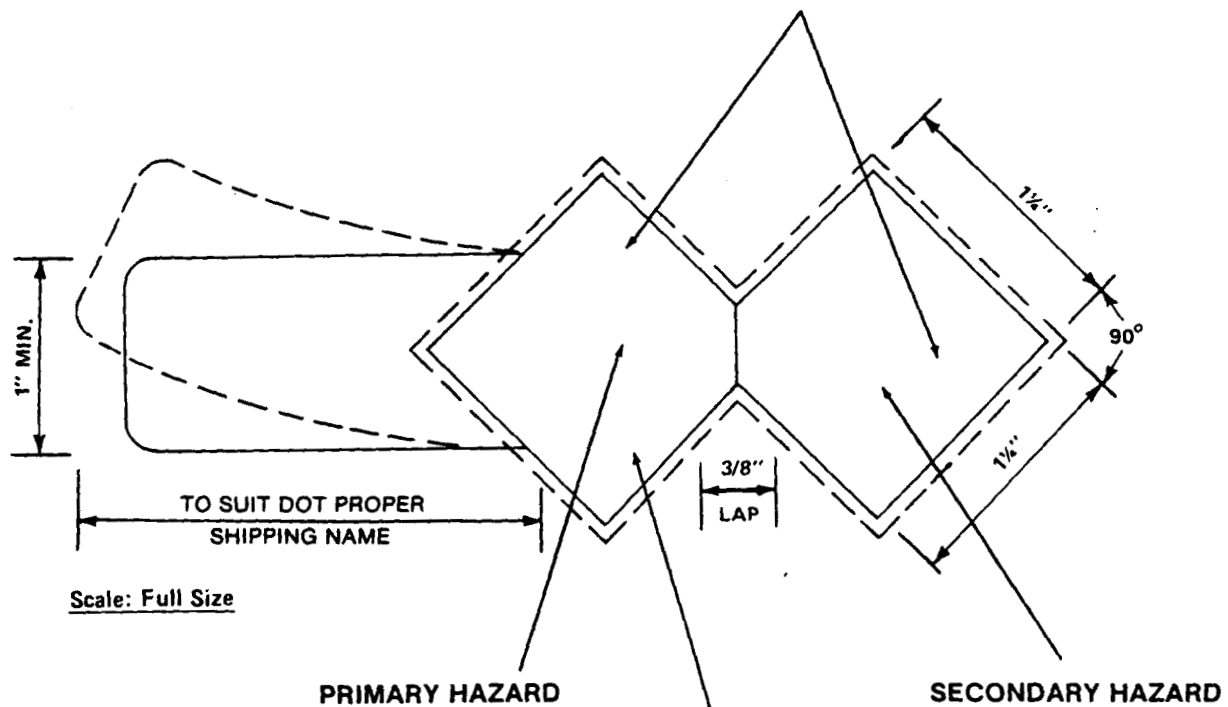
When necessary to provide distinction between the color of the diamond and any background color, a 1/16" (2 mm) border of contrasting color shall be used.

NOTE: The word "GAS" may or may not be included in the inch and one quarter diamond of the BASIC MARKING.

**FIGURE 2**

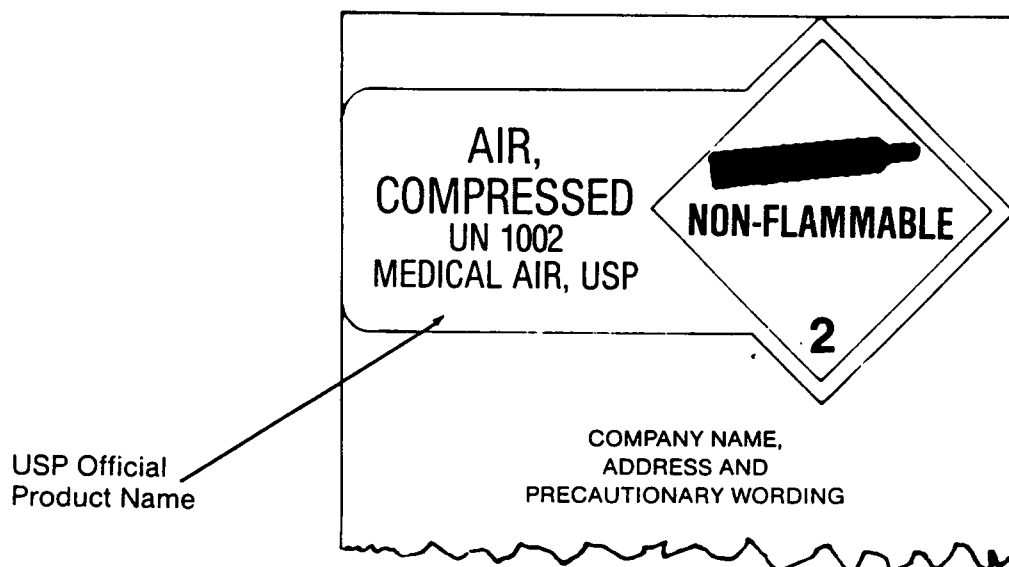
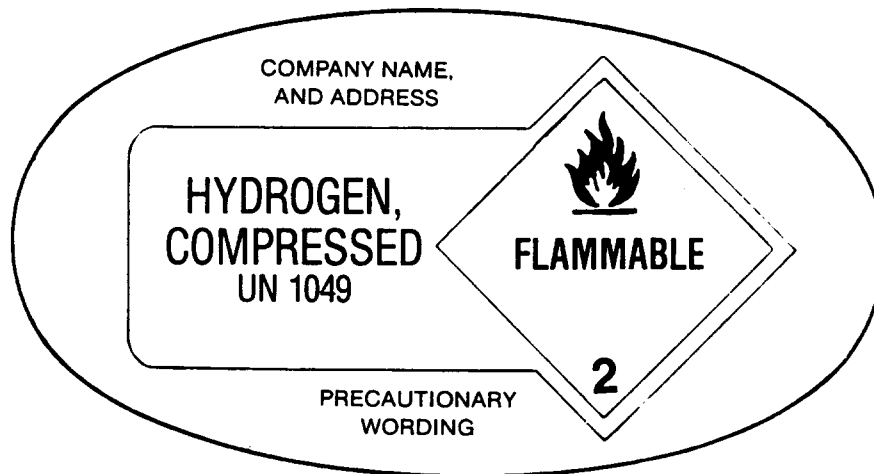
The BASIC MARKING in Figure 2 is the same as in Figure 1, except that additional diamonds are added to denote the additional hazard when multiple labels are required by 49 CFR 172.101 or the TC regulations.

The colors of the individual diamonds may be different and should be in accordance with 49 CFR 172.407 through 172.450 or the TC regulations. The primary hazard diamond shall be placed to the left of the secondary hazard diamond(s).



The hazard class number only appears in the primary hazard diamond.

**FIGURE 3**  
**EXAMPLES OF CGA MARKING SYSTEM**



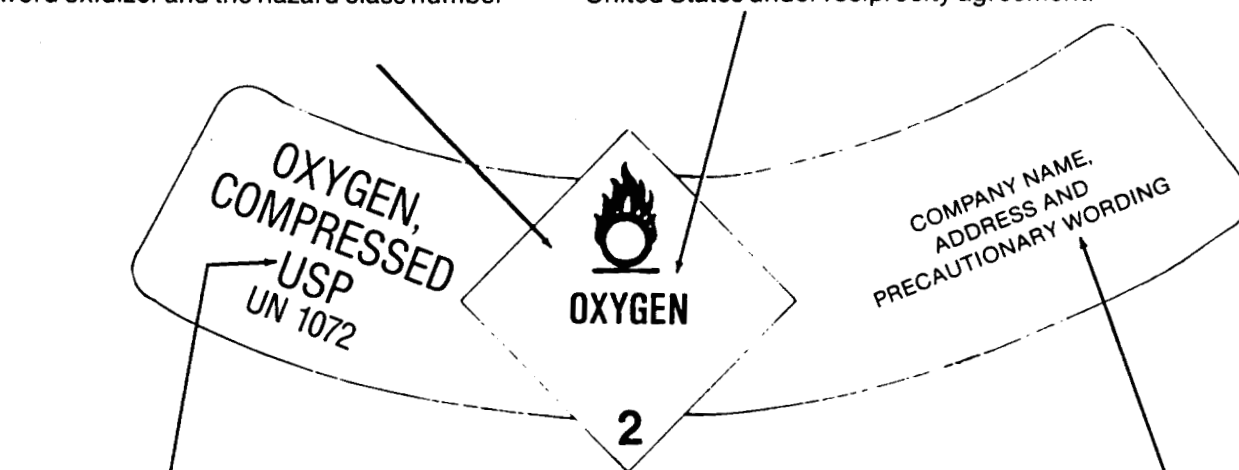
NOTE: When required by the U.S. FDA or Health and Welfare Canada the "USP/NF" marking may appear either directly above, below, or beside the proper shipping name in the panel.



**FIGURE 4****EXAMPLES OF CGA MARKING SYSTEM FOR U.S. DOMESTIC SHIPMENT OF OXYGEN & AMMONIA**

In the United States, the word oxygen and the hazard class number 2 must replace the word oxidizer and the hazard class number

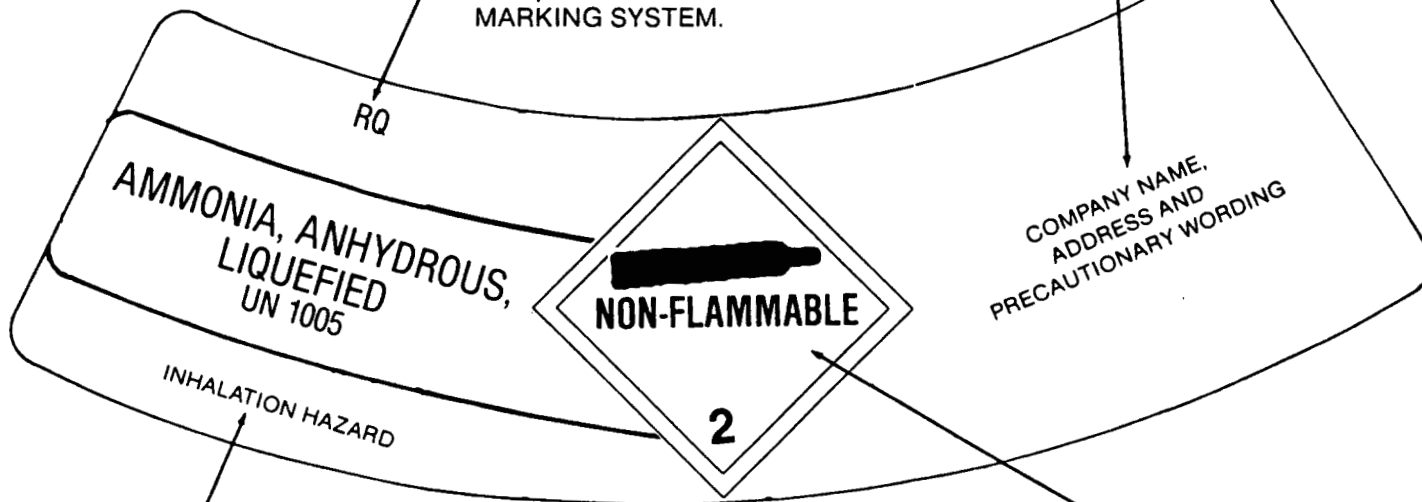
5.1. In Canada, words are not permitted except for cylinders shipped from the United States under reciprocity agreement.



When the USP/NF markings are required by the FDA or Health and Welfare Canada, they may be displayed in the left panel.

This portion of the label may be used to display the precautionary wording required by the FDA and OSHA or Health and Welfare Canada.

In the United States, the Letters "RQ" must be printed in association with the shipping name in letters not less than 1/16" (2 mm) in height. This information may appear in the panel or elsewhere in the CGA MARKING SYSTEM.



In the United States, the words "Inhalation Hazard" must be printed in association with the shipping name in letters not less than 1/16" (2 mm) in height. This information may appear in the panel or elsewhere in the CGA MARKING SYSTEM.

In Canada, the nonflammable gas diamond would be replaced with a corrosive gas diamond.